ABSTRACT OF DISCLOSURE

A guideless stage for aligning a wafer in a microlithography system is disclosed, and a reaction frame is disclosed which isolates both external vibrations as well as vibrations caused by reaction forces from an object stage. In the guideless stage an object stage is disclosed for movement in at least two directions and two separate and independently movable followers move and follow the object stage and cooperating linear force actuators are mounted on the object stage and the followers for positioning the object stage in the first and second directions. The reaction frame is mounted on a base structure independent of the base for the object stage so that the object stage is supported in space independent of the reaction frame. At least one follower is disclosed having a pair of arms which are respectively movable in a pair of parallel planes with the center of gravity of the object stage therebetween. The linear positioning forces of the actuator drive means are mounted and controlled so that the vector sum of the moments of force at the center of gravity of the object stage due to the positioning forces of the drive means is substantially equal to zero. The actuator mounting means can include at least two thin flexible members mounted in series with the primary direction of flex of the members being orthogonal to one another.